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ABSTRACT

A review of research on creative thinking indicates that children labeled as disadvantaged have creative strengths upon which to build a program of education. Studies have shown that, in general children from a relatively disadvantaged background perform better on tasks of figural creativity than their advantaged peers. If teachers are to emphasize children's positives, they should: (1) be aware that their attitudes and values are transmitted both verbally and nonverbally; (2) try to enhance their students' self-concept; and (3) accept children's ideas and the ways they express them. Studies also show that disadvantaged children perform better on figural creativity than they do on verbal creativity measures. Results of creativity research comparing black and white children are conflicting. Developmental racial comparisons have shown that black children catch up with, and in many cases surpass, their white peers in figural creativity. A workshop emphasizing the creative positive of disadvantaged elementary school children is considered to have elicited their "hidden" verbal talents through techniques encouraging them to responde freely, creativity tests with no time limits, and sympathetic examiners. A comparative three-year program of language development examined the efficiency of an oral language program and an experimental reading program in improving language development, achievement, and creative thinking. The attached abstract bibliography on creativity includes entries from "Research in Education" and journal citations. (KM)

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CREATIVITY: A POSITIVE OF YOUNG CHILDREN
(Paper and Abstract Bibliography)

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CREATIVITY: A POSITIVE OF YOUNG CHILDREN

For the purpose of compensatory education programs, disadvantagement is often defined in terms of a deprived environment, the lack of certain cultural experiences, the lack of opportunity to participate in an educational or academic-type preschool, or the use of a language different from that used by those in the mainstream culture. Compensatory programs designed for disadvantaged children too often start with the deficits of these children. Little attention seems to be given to the fact that these same children have some very positive assets. Research on creative thinking indicates that children labelled as disadvantaged do have strengths and positives upon which to build a program of education.

FIGURAL CREATIVITY

Studies comparing disadvantaged and advantaged children have produced some interesting results: in general, children from a relatively disadvantaged background perform better on tasks of figural creativity than their advantaged peers. Figural creativity, as defined and measured by the Torrance Tests of Creative Thinking, consists of a set of incomplete figures which the child is to incorporate into some picture or figure; repeated figures, such as circles, triangles, or parallel lines which the child is to use either as a part of a large figure, or as several smaller figures; and picture construction, in which the child is given an ambiguously formed piece of colored paper which he pastes in the test booklet, and uses as an integral part of a picture. These three tasks are then scored on four dimensions: fluency

(number of responses), flexibility (number of categories of responses), originality (statistical infrequency, as listed in the scoring manual), and elaboration (number of details).

Bashaw and White (1971) examined the relationship between readiness as measured by the Torrance Tests of Creative Thinking (TTCT) in economically deprived kindergarten children enrolled in a Follow-Through program. The children's overall performance on the readiness tests was low as compared with the published norms. However, the results of the creativity tests indicated the presence of figural creativity skills that were not affected adversely by the poverty conditions.

Torrance, using his tests of creative thinking (1969), found that on the figural forms of the TTCT, disadvantaged groups almost always hold their own or surpass similarly constituted advantaged groups. He found this to be true in a variety of localities, throughout the United States, and for the ethnic groups of Afro-Americans, American Indians, Mexican-Americans, and Caucasians. He found that high fluency and originality was often present in creative movement or dance, and in games and problem solving activities. These findings are based somewhat on his observations rather than totally on data obtained from measures of creativity.

Most of the studies comparing creativity test results between advantaged and disadvantaged children have found that disadvantaged children perform better than their advantaged peers on measures of figural creativity (e.g., Gezi 1969). One possible explanation is that middle class (i.e., advantaged) children live in a more highly structured environment than disadvantaged

children. In contrast, the lower class child has the opportunity to develop his creativity through the nature of his unstructured play. Teachers of disadvantaged children should recognize the visual competencies of the children as well as their nonverbal ways of communicating and emphasize them whenever possible (e.g., Rogers, 1968). Many times classroom teachers depend too heavily on verbal skills to the exclusion of other skills. For disadvantaged children teachers should emphasize the nonverbal and visual skills, and use them in evaluating the outcomes of learning.

LEARNING ENVIRONMENT

What features of the environment should teachers attend to if they are to emphasize the positives of children? First, teachers themselves are an important part of the environment. Their attitudes and values are transmitted to the children both verbally and nonverbally. If the teacher tests learning through the use of verbal measures only, she is placing value on verbal skills over other types of achievement. Although the teacher may say other kinds of skills are worthwhile, her actions (and grading policies) might indicate something totally different.

Teachers should try to enhance the self-concepts of their students. A child who feels good about himself--and about himself as a student--learns better regardless of what subject is being taught. The teacher should make an effort to note something worthwhile in each child. Recognizing the value of creative activity, musical talent, or the ability to view a problem a different way becomes very concrete and relevant. A

child having difficulty in reading may express himself quite well musically. By recognizing the child's abilities in music, and making him feel good about them, perhaps the teacher can transfer some positive feelings to the reading lesson--especially if the content of the reading lesson pertains to music.

Even when no standards are verbalized, children can soon figure out what the teacher wants and expects of them. They can readily see that what Jonnie does is praised, while Jan's behavior is punished. They then try to do things that will elicit praise for themselves. Children as young as three are acutely aware of what is "right" and "acceptable". If the teacher is aware of what children perceive as acceptable behavior, she can encourage the children to value their own abilities.

A child will generally learn better and share his ideas more readily if he feels safe in doing so. If he feels that the teacher is going to "pick" on him because he doesn't say things just right, or if he is afraid the children will laugh at him, he withholds his ideas. Since he is quiet, and may not participate in the class discussions, the teacher may label him as "nonverbal", a "slow learner". The teacher should encourage a psychologically safe environment by allowing the children to express themselves and their ideas without fear of ridicule or threat.

One way to provide a psychologically safe environment is to count ideas as more important than the way they're expressed. For example, many children in compensatory education programs may speak English as their second language or dialect. If they are corrected grammatically each

time they try to say something, they will soon think it is more important to say nothing with correct grammar than to say something in a less than perfect grammar. Ideas themselves and the thinking process behind them should be rewarded.

The problem solving approach will generally provide children with better future "skills" than memorization alone. Although some school curricula simple prepare children for "afterlife" (Katz, 1972), problem solving experience might encourage the children to use skills they have rather than to simply store information.

SES AND CREATIVE THINKING

Other studies support findings that disadvantaged children perform better than their advantaged peers on measures of figural creativity.

Rogers (1968) gave the Torrance Tests of Creative Thinking, and found that disadvantaged children performed more poorly than advantaged children on drawing ability, but performed better in expressing their ideas visually on tests of creative thinking. Training given to the disadvantaged children helped to improve their drawing. Rogers found no SES differences in the ability to discriminate between good and bad composition in drawing, as measured by the Meier Art Judgment Test.

In comparative research on the effects of socioeconomic status on creative thinking abilities, SES is often loosely dichotomized as advantaged versus disadvantaged. In some studies race is held constant, while in others it is ignored. However, the findings are relatively consistent: disadvantaged

children perform better on figural measures of creative thinking than they do on verbal creativity measures.

Solomon (1967) administered both the figural and verbal forms of the Torrance Tests of Creative Thinking to 722 first, third, and fifth grade children. She found no consistent pattern in the relationships between SES and creative thinking. Some measures favored the high SES children, and others favored the lower SES children. She concluded that overall these measures were relatively neutral toward SES, and that they were uncorrelated with measures of intelligence.

In a study by Smith (1965) both race and SES were considered, although not jointly. Smith administered both the figural and verbal forms of the Torrance Tests of Creative Thinking to black and white fifth graders. Among the white children, he found that the verbal measures were positively related to SES while the figural measures were negatively related. In other words, a child who was low on the SES scale (i.e., disadvantaged) performed better on the measures of figural creativity. Among the black children, there were no statistically significant relationships between the creativity measures and SES. Comparisons were not reported between black and white children of similar SES.

RACIAL STUDIES

Some comparative research has been done with black and white children using various measures of creativity. Results are conflicting in that some studies find black children superior on these tests while other

studies show white children to be superior. For example, Richmond (1968) found that black children performed better than white children on measures of figural creativity, while white children performed better than black children on measures of verbal creativity.

Conflicting results were also obtained by Iscoe and Pierce-Jones (1964) who used a verbal creativity task from Guilford (Unusual Uses-fluency). The black children, aged five to nine, outperformed their white peers on this task.

When racial comparisons are made developmentally, interesting results appear. For example, one study by Holdman and Torrance (1967) evaluating children in the first through fourth grades on creativity measures, found that black children performed at a lower level than their white peers in the first grade, but by the fourth grade had equaled, and in many cases surpassed, their white peers on the fluency, flexibility, and originality dimensions of figural creativity. The white children were from a middle class school in Minnesota, while the black children were from an all black school in Georgia. No socioeconomic data were given on the latter school.

WORKSHOP APPROACH

Torrance and Torrance (1972) used a workshop format in which the creative positives of 91 disadvantaged elementary school children aged 6 to 13 were emphasized. The workshop leaders were enrolled in a summer school course entitled "Learning Difficulties of Disadvantaged Children." During the three week practicum-workshop, students worked with disadvantaged children in a work-

shop setting. Each day's workshop session (which took place in a city park) lasted four hours and involved the children's participation in large group, small group, and individual activities such as creative writing, creative movement, and painting. Torrance found that high productivity in various aspects of creativity was more frequent in small groups than in individual or large group situations. Disadvantaged children appear to be highly motivated by games, music, sports, humor, and concrete objects. Warm-up activities seem to enable disadvantaged children to achieve a higher level of mental functioning than would otherwise be attained. It was also noted that the language of disadvantaged children was rich in imagery, a finding which is in contrast to the more common belief that these children have few verbal skills. However, the children were in a psychologically safe environment, and were not being judged on "Standard English" standards.

Torrance suggested that the workshop setting elicited "hidden" verbal talents of these children through various warm-up techniques which encouraged children to be free in their responses, creativity tests which had no time limits, and sympathetic examiners who recorded their responses. Evaluation of the three-week workshop did not use any of the traditional tests of reading, mathematics, or language arts. The Torrance Tests of Creative Thinking were administered at the beginning and end of the workshop, and showed statistically significant gains in the ability to produce ideas. Torrance cites further evidence of the success of the workshop (p. 9):

> More important to us, however, is the evidence the leaders were able to cite to show that the children had become increasingly more involved in their learning; increasingly gave expression to their innate sense of wonder and curiosity; increasingly gave vent to their desires to find out things; to increasingly show ability to persist with a task; learned how better to withstand failure and start over, if necessary, to achieve a desired goal; became more sensitive and humane in their responses to others; developed more positive attitudes about learning; and began considering a greater variety of alternative solutions to problems.

Torrance suggests that the above workshop activities could serve as a model for education for the disadvantaged child. However, before the model could be widely accepted, more conventional assessment techniques would have to be employed and the workshop used in more conventional settings.

LANGUAGE PROGRAMS

A study by Dunn et al. (1968) described a comparative three year program of language development. Although the programs and materials used were designed to eliminate deficiencies in disadvantaged children, the materials were used in such a way as to emphasize the assets of the children. The purpose of the language development program was to examine the efficiency of an oral language program and an experimental reading program in improving the academic achievement, language development, intellectual functioning, and creative thinking of young, disadvantaged children. One group of children used the Peabody Language Developmental Kits, another a reading program using the Initial Teaching Alphabet, and a third group used a conventional basal reading program. After three years of the program, the first two groups appeared to make the most gains in intellectual and language development, school achievement, and creative thinking.

BUILD ON THE ASSETS

Disadvantaged children do respond well when they can do so in terms of their own experiences, and when they feel pyschologically safe in making the response. Many of the traditional assessment devices force children to respond in terms of middle-class experiences which they are lacking. As a result, children appear to be deficient in abilities and aptitudes measured by these tests. Creative thinking measures allow the child to respond in terms of his own experiences. Testing situations such as those provided by Torrance in his workshop appear to motivate the child to perform, since the environment is relatively safe and nonthreatening. Results of such testing situations using measures of creativity can give some indication of the child's potential. For example, Bruch (1969) tells of a youth who had demonstrated exceptional talent in music. She suggests that this identified talent, although not in the range of the "traditional academics", might be used as a basis for an individualized program to help him develop vocabulary as well as thinking processes.

Kagan (Pratt, 1973) suggests that disadvantaged children in America are expected, both by the public and by the poor themselves, to be failures, first in school, and later in the job market. Research (e.g., Rosenthal and Jackson, 1968) has shown that children whose teachers expect them to fail generally do fail. Kagan suggests that one of the reasons that slum children have difficulties learning the traditional three "R"s is that their teachers expect them to have difficulties. A commonly held belief about disadvantaged children is that they are so handicapped by a deprived

environment that there is little a teacher can do when these children get to school. Kagan suggests that if we stop stressing disadvantage and deprivation, and instead put primary emphasis on the skills that children do possess (not just academic skills), we might succeed in discovering the motivational systems and learning styles of these children, and in doing so, facilitate academic success as well as strengthen creativity.

References

1. Bashaw, W. L. & White, W. F. Figural creativity and convergent thinking among culturally deprived kindergarten children. 1971, ED 047 346, 9p.

2. Bruch, C. B. Teaching gifted children social sciences in grades four through six. 1971, ED 051 608, 40p.

3. Dunn, L. M., et al. The effectiveness of the Peabody Language Development Kits and the Initial Teaching Alphabet with disadvantaged children in the primary grades: A report after the third grade of the Cooperative Language Development Project. 1968, ED 043 723, 169p.

4. Gezi, K. I. Analyses of certain measures of creativity and self-concept and their relationships to social class. 1969, ED 031 533, 9p.

5. Goldman, R. J. & Torrance, E. P. Creative development in a segregated Negro school in the South. 1967, ED 039 653, 57p.

6. Katz, L. G. Perspectives on early childhood education. 1972, ED 068 203, 12p.

7. Pratt, B. Kagan counters Freud, Piaget theories on early childhood deprivation effects. APA Monitor, 1973, 4(2), p. 1 & 7.

8. Richmond, B. O. Creative and cognitive abilities of white and Negro children. 1969, ED 030 922, 9p.

9. Rogers, D. W. Visual expression: A creative advantage of the of the disadvantaged. Elementary School Journal, 1968, 68, 394-399.

10. Rosenthal, R. & Jacobson, L. Pygmalion in the classroom. Holt, Rinehart, & Winston, Inc. 1968.

11. Smith, R. M. The relationship of creativity to social class. 1965, ED 003 343, 141p.

12. Solomon, A. O. A comparative analysis of creative and intelligent behavior of elementary school children with different socioeconomic backgrounds. Final progress report. 1967, ED 017 022, 212p.

13. Torrance, E. P. Developing unwakened and unrecognized potential. Proceedings of a conference held at the University of Minnesota. 1969, ED 036 936, 181p.

14. Torrance, E. P. & Torrance, P. Combining creative problem solving with creative expressive activities in the education of disadvantaged young people. Journal of Creative Behavior, 1972, 6 (1), 1-10.

Creativity: An Abstract Bibliography

This abstract bibliography was compiled from a computer search of the ERIC data base, and includes entries from Research in Education (RIE) through February 1973. Journal citations are also included.

Citations for which ERIC document (ED) numbers are given are available through the ERIC Document Reproduction Service (EDRS) in either microfiche (MF) or hard copy (HC). (See ordering directions in the back of this publication.) Some publications which are also available directly from other sources have availability information listed below the abstract.

Citations were selected according to their relevance to the topic. In most cases research pertaining to older children was not included unless it held direct implications for younger children. The ERIC system contains more than 1000 references to creativity and creative thinking. Of necessity, this bibliography represents a very select sample.

CREATIVITY: AN ABSTRACT BIBLIOGRAPHY

1. Amram, Fred M.; Giese, David L. Creativity Training--A Tool for Motivating Disadvantaged Students. 1968, 15p. ED 018 210

Among the courses in the upward bound project at the General College, University of Minnesota, is creative problem solving. It is felt that creativity training gives the underachiever the motivation and skill to solve his own problems by showing him the procedures of problem definition and solution. Sixty-three students, of average ability but with meager cultural backgrounds, completed the 6-week session. They were challenged by such ideas and tasks as becoming aware of surroundings and experiences, noting habits and functional fixations, finding idea-spurring questions, listing and modifying attributes, completing a "what if..." series of situations, and other devices for stimulating imagination. They also chose problem projects that they could pursue after the session. Pre- and post-tests indicated large gains in creative skills and self-concepts, and although it is uncertain whether these were entirely due to this particular course or to the upward bound project as a whole, evidence is mounting that creativity training should be included in the school curriculum, particularly for the socially handicapped. Staff training for the session included consideration of the special problems of the disadvantaged, the purpose of the entire project and the place of creativity training in it, creativity and its frustration in young people, and the teacher's role in developing imaginative thinking. This document is Volume 4, Number 1 of the General College Studies, 1967-68.

2. Barclay, Doris L. A Pilot Study of Art Education for the Economically and Socially Deprived Child. Final Report. 1966, 54p. ED 010 554

The effect of art education on improving the attitudes and cultural awareness of disadvantaged youth was studied in this pilot program. The California Test of Personality and the Children's Personality Questionnaire were administered before and after a special, 12-month art program to 25 children (ages 8-12) for data on personal and social characteristics. An interview guide was constructed to indicate aesthetic literacy (performance) and was used before, during, and after each selected art experience. Interview questions were designed and used to evaluate gains in performance resulting from each lesson or experience. Some preliminary conclusions were (1) as children develop nonconforming attitudes as part of skill acquisition in the visual arts, conflict can be generated that repudiates attitudes conditioned by a subcultural environment, (2) art education is nonessential to the development of creative problem-solving ability, and (3) encouragement of conflicts or attitude changes is a nonessential part of the education of economically and socially disadvantaged children. A followup to this pilot project was suggested for obtaining longitudinal data on the sample of children.

3. Bashaw, W. L.; White, William F. Figural Creativity and Convergent Thinking Among Culturally Deprived Kindergarten Children. February 1971, 9p. ED 047 346

This study was an attempt to examine the relationship between readiness (as measured by the Metropolitan Readiness Test) and creativity (as measured by the Torrance Tests of Creative Thinking). The sample was 227 economically deprived kindergarten children in a city school system in the southeastern United States. Scoring was carried out in terms of Guilford's divergent thinking factors of fluency, flexibility, originality and elaboration. The children's overall performance on the readiness tests was low compared with published norms. The profile of group averages, however, indicated the presence of some figural creativity skills that were not adversely affected by poverty conditions. Data analysis findings and derivative problems are discussed. Correlationsal data suggests strongly the need to strengthen the training of this type of child in the general areas of art work, perceptual motor skills and elaborative responses if creativity development is to be enhanced.

4. Bolton, Shirley L. An Introductory Study of Art as Creative Learning for the Rural Culturally Disadvantaged. Studies in Art Education, Winter, 1969, 10(2), 50-56.

This study attempted to test the theory that the ability to think creatively is a potential quality possessed by all human beings, and that this potential can be developed through teaching children to form an appreciation of what they have done with art materials. The subjects were 4th graders ranging in age from 9 to 16 years, and 6th graders ranging in age from 11 to 17 years, all from a predominantly black school in an impoverished rural county in Georgia. The Torrance Figural Tests, Thinking Creativity with Pictures, were administered as pretests. During the following 3 month period the students were involved in art activities involving familiarization with fundamental concepts in art, production of their own works, and critical evaluation of such works. At the end of the third month they were retested to determine whether there was any growth development in their creative thinking. Results showed significant pre-/post-test gains for the disadvantaged fourth graders and slower gains for the sixth graders. These gains seem to support the theory that learning definitions, explanations and interpretations is as vital to art learning as the activity of making art objects. Furthermore, although creative abilities do grow as a result of creative learning, it appears that these abilities are never completely dormant. This theory is supported by the observation that the disadvantaged children displayed creative abilities before the training program, surpassing the middle class control group on the pretest in all categories except elaboration.

5. Bressler, Marvin; Wilcox, Preston. Participant-Observational Study of the Princeton Summer Studies Program for Environmentally Deprived High School Boys. September 1966, 60p. ED 010 406

A summer program was conducted for disadvantaged youths to engage in activities of creative thinking and expression, wide exploration, free questioning, and self-esteem development. Forty high school sophomore boys (predominately Negro) were counseled, guided, and instructed in such subject areas as literature, science, and art. The research method employed was participant-observation, supplemented by record examinations and specially devised surveys. A post-analysis suggested that many of the student participants exhibited increased academic proficiency, better attitudes toward learning, and greater participation in school and community activities. Indications were that a similar program might be advantageously adopted in many geographical areas.

6. Bruch, Catherine B. Teaching Gifted Children Social Sciences in Grades Four through Six. 1971, 40p. ED 051 608

Addressed to those who teach social sciences to giften students in grades 4-6, the booklet elaborates upon suggestions made in the proposed framework on the social sciences for California public schools. Concepts, generalizations and themes of the social sciences are examined as they relate to principles of teaching social science to gifted children. Emphasis is upon productive thinking, creative thinking, problem solving, and a blending of cognitive-affective skills. The concern is expressed that, rather than merely learning simple inquiry training, gifted students experience productive thinking through behaving like social scientists and that they conceive of themselves as problem-solving thinkers. Social science skills are examined (conceptual models, behavioral skills, evaluative and creative skills). Higher intellectual skills are considered in a chapter discussing several theoretical frameworks for examining thinking abilities. Creative persons and the creative process are briefly discussed in relation to teacher strategies. Thoughts on the contribution of the social sciences to the development of the gifted child's potential conclude the booklet.

7. Bruininks, Robert H.; Feldman, David H. Creativity, Intelligence, and Achievement Among Disadvantaged Children. Psychology in the Schools, 1970, 7(3), 260-264.

Children in the third and fourth grades were administered the Torrance Tests of Creativity Thinking, the Stanford-Binet Intelligence Scale, the Peabody Picture Vocabulary Test and the Metropolitan Achievement Tests. Multiple correlations were computed for these variables. The major finding of the study was that Torrance's tests of creativity acted as a

suppressor variable, increasing the relation between IQ and achievement among the disadvantaged children sampled. It seems reasonable to speculate that intellectual flexibility and ideational fluency are not important to school achievement because the Torrance tests require these skills. It may be that knowledge acquisition skills, particularly vocabulary skills, are better predictors of academic achievement than the skills which are required for divergent thinking.

8. Busse, Thomas V.; And Others. Testing Conditions and the Measurement of Creative Abilities in Lower-Class Preschool Children. February 1971, 42p. ED 046 979

The effects of play-like, verbal-feedback, and nonverbal-feedback testing conditions on three creative ability measures and the reliabilities of those measures were studied using 175 lower-class preschool children. The creativity measures were found to be largely unaffected by variations in testing conditions, but at the same time, different forms of the measures hypothesized to be parallel proved to have only small relationships with each other. However, split-half reliabilities of the individual measures were fairly high.

9. CEC Selected Convention Papers 1969. The Gifted. Selected Papers Presented at the Annual International Convention of the Council for Exceptional Children (47th, Denver, Colorado, April 6-12, 1969). Council for Exceptional Children, Arlington, Va. April 1969, 36p. ED 041 439

Articles included in the collection of convention papers discuss a creativity score from the Stanford Binet and its applications, performance based instruction. Abstracts of papers are provided on the following topics: effects of anxiety on creativity, a followup of sixth grade regular and special class gifted, a holistic conception of creativity and intelligence, measuring perceptual motor ability, and curriculum in differential education for the gifted.

10. Clark, Bill M.; And Others. Impact 70. 1970, 70p. ED 041 836

Project IMPACT is a locally-initiated, federally-funded attempt to encourage creativity in elementary and secondary classrooms. From a start with nine school districts, it had been extended by its third year to nearly 60 school districts in nine counties. This report covers a one-year inservice program culminating in a 5-week teach-and-study institute. Its major goals were to help teachers examine the many variables which influence the humaneness of the classroom, and to investigate with teachers the research and literature which seem to be helpful in bringing into focus

the teacher's role in encouraging productive thinking. The document contains the following chapters: (1) introduction--educating 21st century man, (2) the program--impact's schedule of inservice training, (3) the stimulus--theories impact teachers examine, behavioral objectives, discovery learning, simulation and media, productive thinking, effective questioning, (4) communication is the process, (5) response--how teachers apply impacts theories, with selected reports from each of the teams, (6) the measurement--research findings giving evaluations of the project in relation to creativity in the classroom, self-concept of the teacher and self-concept of the student. The evaluation shows that impact is influencing the thinking processes taking place in classrooms, with the possible result of more creative men and women as products of the education system. (See ED 033 906 for 1969 annual evaluation report.)

11. Cohen, Harold L.; And Others. Measuring the Contribution of the Arts in the Education of Disadvantaged Children. Final Report. August 1968, 192p. ED 024 746

This research project attempted to evaluate changes in the specific educational behaviors of 73 underachieving urban Negro children and 17 underachieving middle-class white children who participated in the 6-week Friends/Morgan (F/M) summer demonstration program in the arts. Training sessions on applied operant theory and environmental design were held by the Institute for Behavioral Research for the F/M teachers and student interns to assist them in developing explicit measurable goals and procedures necessary to fulfill the goals of the program. The children were pre- and post-tested on the Primary Mental Abilities Test (PMA), changes in the scores of the major experimental group were compared with those of a comparison group drawn randomly from the entire school population (not only underachievers). Other behavioral data relative to these changes were accumulated. The Flanagan Aptitude Classification Tests measured the effects of participation in the program on the student interns. Photographic slides recorded the children's involvement. An appendix contains the script of an audiovisual presentation which overviews the entire F/M project.

12. Davis, Gary A. Problems in Assessing the Effectiveness of Creative Thinking. March 1970, 6p. ED 041 046

A workbook designed to teach creative attitudes and idea-producing techniques, previously used successfully with middle-class students, was field tested with 6th and 8th grade inner city students divided into training and control groups. Results were evaluated by an attitude survey and three subtests from the Torrance battery. The results were partly negative or ambiguous and it was impossible to draw conclusions about the effectiveness of the workbook in this situation. However, 75 of the students in the training group felt that they had benefited from the course and this was endorsed by a majority of their teachers. The training materials, the low abilities

of the students in the classes chosen, the teacher's handling of the materials and class (due to inadequate pretraining), insensitivity of the tests, and oversensitivity of the survey, are all factors that may have affected the results, thus making the apportionment of blame impossible.

13. Developing Unawakened and Unrecognized Potential. Proceedings of a Conference Held at the University of Minnesota (Minneapolis, April 26, 1969). Minnesota State Department of Education, St. Paul. April 1969, 181p. ED 036 936

The proceedings include addresses by Arthur S. Fleming and Samuel S. Shepard on the educational needs of the disadvantaged black and by E. Paul Torrance on creativity development. Transcriptions are included of workshop papers on teacher training, teacher role in creativity development, teacher resentment toward the adolescent innovator, teacher identification of giftedness, and teacher style. Additional papers treat the use of intelligence tests and of psycholinguistic training with the disadvantaged, the problems of disruption in schools, and the development of creative talents. Also described are programs on indian reservations, in urban and rural areas, and in minority neighborhoods.

14. Diamond, Florence R. The Effectiveness of a Children's Workshop in the Creative Arts in Forwarding Personal and Intellectual Development. Studies in Art Education, Fall, 1969, 11(1), 52-60.

The Pasadena Art Museum sponsored a research program intended to test the value of the art curriculum of its Junior Art Workshops, and at the same time make a contribution toward overcoming the ill effects of cultural handicap in a group of boys with no known interest in the visual arts. It was hypothesized that such an experience would be of assistance in overcoming the ill effects of passivity and low self-esteem found in so many disadvantaged children. The subjects were 44 boys selected by random from third grade classes in several schools located in poverty areas. Attainment of two objectives, greater self-acceptance and increased readiness for active mastery was assessed through responses to projective materuasl (selected to demonstrate changes which may have occurred within the child), achievement scores in reading (in which all were low initially) and measures of creative expression in painting. Increased readiness for active mastery was significantly improved; no indications self-esteem improved. E's averaged higher reading achievement rates than their matched paired controls, but results were not stat. sig. Classroom teachers observed that E's were more free in classroom behavior, as compared with C's, but less so than middle class children. The results justify further exploration of the use of creative art in effecting constructive changes in disadvantaged children's personality and learning patterns.

15. Doyle, Marianne. A Comparative Study of Creativity in Negroes and Caucasians. Child Study Journal, Fall, 1970, 1(1), 25-27.

It was suggested that children from the lower class were more creative than those from the middle and upper classes since children from the lower classes seem to be more spontaneous in their behavior and actions, less conforming, more independent of their parents, and more highly developed in motor skills. The sample in this study consisted of 27 Negroes from the lower class and 31 whites from the middle class. The children were in the seventh and ninth grades. Subjects were shown 4 outline sketches termed semi-realistic, and asked to list as many uses for these objects as they could. The Negroes did better than the whites, but the difference was not statistically significant. It was suggested that the population was drawn from a campus school, and therefore the lower class parents might be upward aspiring and different from other lower class parents.

16. Dunn, Lloyd M.; And Others. The Effectiveness of the Peabody Language Development Kits and the Initial Teaching Alphabet with Disadvantaged Children in the Primary Grades. A Report After the Third Grade of the Cooperative Language Development Project. 1968, 169p. ED 043 723

The purpose of the three-year cooperative language development project was to examine the efficacy of an oral language development program and an experimental reading program in improving the academic achievement, language development, intellectual functioning, and creative thinking of disadvantaged children in primary grades. The experimental treatments were: (1) an oral language program consisting of experimental versions of the Peabody Language Development Kits, and (2) an experimental reading (Initial Teaching Alphabet) approach. In contrast to the experimental groups, a control group used a conventional basal reading program. The effectiveness of the experimental programs was measured by various standardized tests, such as the Peabody Language Production Inventory and the Stanford-Binet Intelligence Scale. After three years of intervention, the two experimental approaches in combination appeared to be most effective treatment for improving the intellectual and language development as well as the school achievement and creative thinking of disadvantaged children. It appears that exposure to the experimental reading and language development programs in this study had a number of beneficial effects. For a report of the project after two years, see ED 026 125.

17. An Early School Admissions Project. Related to In-School Learning Activities and Experiences for Culturally Deprived Children. Baltimore City Public Schools, Md. July 1962, 72p. ED 001 859

The educational needs of the city of Baltimore have increased in a period when its ability to support education has decreased. The number of

culturally deprived children with special educational needs has increased. Factors used to identify cultural deprivation include population density of the area, divorce rate, value and condition of homes, student non-promotion rate, and student grade levels in arithmetic and reading. This project is designed to accelerate the achievement of disadvantaged children, to identify the talented, to heighten their aspirations, and to develop in them the skills necessary for full and mature citizenship. The program prepares 4- and 5-year-old children for a regular elementary school program by reducing gaps in cultural experiences. Each center is staffed by a senior teacher and an assistant teacher. A teacher's aide helps with clerical and nonteaching duties. Parential involvement is of central importance. Although the project will focus on language skills and communication experiences, it will also seek to widen the cultural horizons of the children. Major emphasisi will be placed on expressive activities. Imaginative literature will be read to the children, and they will be instructed in personal hygiene. All community organizations and agencies will be called on to help with research on cultural deprivation and with selection of participants.

18. Dodge, Lowell. Creative Approaches to Tutoring, for Use in the Y.E.S. Summer Program, 1966. 1966, 12p. ED 011 278

Specific examples of new tutoring techniques and materials that are considered more sensitive than conventional methods were offered in this guide. Some of the methods were (1) using comic books, (2) having the tutee create his own materials, (3) the Dear Abby technique, (4) writing a hiptionary, and (5) asking the student to develop his own vignettes. Suggestions are made for ways to discover the interests of the tutee on which to base tutoring activities. This document is also available from the Youth Educational Services, Post Office Box 1168, Durham, N.C. 27702.

19. Fantini, Mario; Weinstein, Gerald. Matching Teaching and Learning Styles for the Disadvantaged. 2p. ED 002 158

There are many different methods of teaching and many different methods of learning. For maximum learning, teaching styles and learning styles should be congruent, this is especially true with the disadvantaged learner. The disadvantaged child comes to school with a certain personality, with certain needs, and with certain built-in mechanisms. He interacts with his classroom environment in a number of ways. Basically, the environment either satisfies his personality needs or his personality comes into conflict with the environment. As the child interacts with his environment, he develops a mechanism for learning as shaped by his experience. This mechanism may be either static or dynamic, depending on his interaction. Teaching styles are also shaped by the environment and personality. One of the most effective teaching styles for the

disadvantaged child is to maintain discipline while encouraging expression. A child should progress from concrete experiences to abstract principles. However, teachers of disadvantaged should not assume that one teaching style will fit all situations. Flexibility enables the urban teacher to meet varying classes successfully and to match teaching to the child's learning style.

20. Gezi, Kal I. Analyses of Certain Measures of Creativity and Self-Concept and Their Relationships to Social Class. March 1969, 9p. ED 031 533

Tested were certain measures of creativity and self concept in middle (M-group) and lower (L-group) social classes. It was hypothesized that: (1) L-group subjects (SS) would have lower self concept than M-group SS; (2) the greater the discrepancy between actual and ideal self, the greater possibility of low self concept; (3) L-group SS would tend to be more creative; and (4) those who are more fluent, flexible, original, and elaborate are also likely to be more creative. Forty SS were given the Torrance Test of Creative Thinking, figural form A, and a specially developed self-referent questionnaire. The major finding of the study is that the L-group scored higher on all aspects of creativity than the M-group. One possible explanation is that middle class children live in a more highly structured milieu than do lower class children. Therefore, the lower class child has the opportunity to develop his creativity through the nature of his unstructured play.

21. Goldman, Ronald J.; Torrance, E. Paul. Creative Development in a Segregated Negro School in the South. December 1967, 57p. ED 039 653

Designed to examine the cultural influences on creative development, the study analyzed imaginative stories by students from a segregated Negro school in Georgia and from a middle class white school in Minnesota. The stories were evaluated in terms of originality, interest, style, and pressures of divergency and conformity. The students were further compared by teacher ratings and by performances on the verbal creative thinking task. Statistical data is provided for the results showing poorer creative ability among the Negro students, and implications regarding cultural causation are indicated.

22. Gormin, Patricia. New Orleans Serves Up Fine Arts to Feed Young Egos. March 1968, 3p. ED 020 988

The educational improvement project is conducting a fine arts program for disadvantaged pupils at two predominantly Negro New Orleans elementary

schools. The program has a two-fold goal--to foster creativity in the pupils and to develop teachers' awareness of student adjustment and learning problems. Included in the project are music education and art and theater experiences. An allied communication arts process is used to interrelate these activities with the language arts. Consultants in the arts from two local universities help teachers to develop experimental teaching techniques. This article was published in the Southern Education Report, Volume 3, Number 7, March 1968.

23. Grossman, Marvin; Torrance, E. Paul. A Creativity Workshop for Disadvantaged Children. Art Education, May, 1970, 23(5), 32-34.

During the summers of 1967 and 1968 creativity workshops were established for identifying and developing creative talent among disadvantaged children. The 1967 workshop enrolled 25 children and lasted for 2 weeks while the 1968 workshop enrolled 60 children and lasted for 3 weeks. The workshops were located in a disadvantaged neighborhood in Athens, Georgia. The children ranged in age from 6 through 12 years. On the first day the children accompanied Dr. Grossman on a short walk to a vacant lot, where they were asked to see if they could find something that was beautiful. The purpose of this excursion was to give children a chance to work together in an atmosphere that encouraged original responses, and to examine objects closely, to look specifically rather than generally. The major project of the workshop, creation of a mural, was then begun. The workshops appeared to be valuable because they gave culturally deprived children opportunities to discover artistic abilities. The children became aware of their own potential for achievement and success.

24. Hunter, Elizabeth. Fostering Creative Expression. February 1968, 5p. ED 041 877

Teachers can encourage youngsters to express their ideas creatively by providing help in three areas--content, language, and process. In terms of content, children often have few resources for tapping their thoughts, and may need "pump primers". For instance, they might be told the beginning and the end of a story and asked to speculate about a variety of middles. Once children have been helped with ideas or can draw upon their own store of experiences, they may still require language help to add interest to their work and make ideas more vivid and expressive. Activities such as taking barren sentences and making them more interesting, or taking interesting sentences and making them dull and ordinary can be helpful. Process aid is important and may initially consist of the whole class working on ideas together. The teacher may take over the mechanics of writing while the class talks out plot variations. The teacher will want to encourage ideas without being judgmental, and the kind of communication he has will be important in making children feel their efforts are worthwhile.

25. Iscoe, Ira; Pierce-Jones, John. Divergent Thinking, Age, and Intelligence in White and Negro Children. Child Development, 1964, 35, 785-797.

Ideational-fluency and ideational-flexibility scores were obtained from an Unusual Uses Test given to 267 Texas white and Negro school children aged 5 to 9. Overall, these divergent-thinking scores were significantly higher for Negroes, and showed low, significant "rs" with WISC for both races. Fluency scores were not dependent upon age as such, but upon race as such and in interaction with age. Flexibility scores showed no over-all relations with age or race. Certain interesting comparisons by WISC subtests, flexibility categories, and 5 age levels are discussed and interpreted. Doubts are raised concerning the notion of creative thinking as a simple function of age or of intelligence--there is need for more developmental studies of originality in varied social and cultural contexts.

26. Karnes, Merle B.; And Others. Culturally Disadvantaged Children of Higher Potential, Intellectual Functioning and Educational Implications. September 1965, 200p. ED 018 505

A research study was conducted to determine the psychoeducational characteristics of high-potential culturally disadvantaged children and the implications of these characteristics for an effective educational program. Intelligence tests were administered to children from six elementary schools within a disadvantaged school district, and the 203 students who scored within the top 20 percent of this population were selected as an experimental study group. Data on the children's intellectual and psycholinguistic abilities, creativity, and academic achievement were obtained from standardized tests and from a diagnostic case study of each child. Data were also gathered and analyzed on such social-emotional factors as (1) the child's perception of self, peers, parents, and teachers, (2) parental attitudes, and (3) frustration. The relationship of these variables, and the characteristics of the study group as compared with those of students in the top 20 percent of the general population (norm group), were studied. The detailed findings of the research are presented and discussed at length.

27. Kosinski, Leonard V., Ed. Readings on Creativity and Imagination in Literature and Language. 1968, 258p.

Readings in this book have been selected to show how creativity and imagination can be the central focus in a literature and language arts curriculum for the elementary grades. Selections are divided into four parts, each with a different emphasis. Part 1 contains three articles which trace the development of imaginative literature and stress the importance of developing a child's sense of fantasy, and six articles which examine the distinguishing characteristics of creativity and its relation to classroom activities. Part 2 includes readings which emphasize the

importance of children's literature and present innovative thought about the teaching of reading. Articles in part 3 explore the development and use of language by children, new grammars, changes occurring within language, aspects of nonverbal communication, and the use of mass media in education. Readings in part 4 discuss the teaching of the language arts, especially literature, language usage, pantomime, and poetry.

Availability: NCTE, 1111 Kenyon Road, Urbana, Ill. 61801 (Stock No. 20532, $3.75, prepaid)

28. Kunz, Jean; Moyer, Joan E. A Comparison of Economically Disadvantaged and Economically Advantaged Kindergarten Children. The Journal of Educational Research, May-June 1969, 62(9), 392-395.

Two studies were conducted concurrently to determine whether there are significant differences in selected characteristics between economically disadvantaged and economically advantaged five-year-olds. The areas investigated included physical skills, social skills, language skills, intelligence, emotional disturbance, creativity in the use of materials, curiosity, attention to and interest in stories, preference for rewards, sensory discrimination ability, problem solving ability, and ability to conserve. Eight null hypotheses were supported, three null hypotheses were not supported, and three null hypotheses were partially supported.

29. Lichtman, Marilyn Vickman. Intelligence, Creativity and Language: An Examination of the Interrelationships of Three Variables among Preschool, Disadvantaged Negro Children. 1969, 301p. ED 061 198

The interrelationships among the three variables of intelligence, creativity, and language in a preschool, disadvantaged Negro sample were investigated. The two main hypotheses were: (1) the interrelationships among the three variables are lower than the interrelationships within each variable; and (2) a factor analysis indicates a factor structure suggesting that the variables measured different aspects of human behavior. A random sample of 104 4-year-old Negro children was selected from pre-kindergarten classes in Washington, D.C. and situated in Title I areas or serviced by Title I funds. Each child was administered six measurement instruments individually in two sessions by a trained experimenter. Data were tabulated and analyzed employing a number of statistical techniques. Results confirmed both major hypotheses regarding the relationship of the variables and the character of the factor structure. Implications for further study were the following: (1) additional research replicating the study with other groups, especially disadvantaged whites and middle class Negroes, (2) additional research involving the nature and measurement of creativity among a disadvantaged preschool group, (3) additional research related to the type of format of a particular instrument in the measurement

of behavior among disadvantaged children, (4) additional research related to the interactions of age and sex on selected variables, and (5) continuous evaluations and revisions of aims and goals of Head Start and similar programs.

30. Lichtman, Marilyn. An Investigation of the Relationship of Three Variables--Intelligence, Creativity, and Language--in Disadvantaged, Preschool Negroes. February 1971, 8p. ED 047 049 (Available in Microfiche Only)

The purpose of this study was to examine the relationship of the variables of intelligence, creativity, and a language component in preschool disadvantaged Negro children. Major hypotheses were: (1) that the specific components of each variable had higher correlations within each variable than between variables, and (2) that each major loaded on a different factor. Results supported both major hypotheses. One of the major implications is that creativity can be measured on a separate dimension from language and verbal intelligence in preschool disadvantaged Negro children.

31. Lundsteen, Sara W.; Fruchter, Benjamin. Relationship of Thought Processes to Language Responses in Disadvantaged Children. Final Report. December 1969, 49p. ED 037 462

The objectives of this study were to determine the strength and importance of the relationships among features of oral and written language proficiency and their accompaying thought processes, and to dimensionalize variables that may be manipulated to assist development of disadvantaged children. Test scores from measures of language/thinking proficiency, such as problem solving, listening, abstract quality of thinking, and reading achievement (15 variables in all), were collected from 312 fifth-grade students randomly placed in experimental and control groups, who had completed all pretests and posttests, and from 153 sixth-grade students who had completed retention tests. Experimental-group children had received instruction in problem solving, listening, and abstract thinking. The major method of statistical analysis consisted of principal-axis factor analysis of the 15 variables, with varimax and oblique rotation. Results showed that three factors could be extracted and interpreted--reading achivement, verbal abstract thinking, and problem solving. An implication of the study was that socioeconomic status, possibly more than I.Q., is a crucial influence on reading performance.

32. Metfessel, Newton S. An Investigation of Attitudinal and Creativity Factors Related to Achieving and Nonachieving Culturally Disadvantaged Youth. Project Potential Preliminary Documentation, Volume I. August 1965, 230p.

This document extensively describes the preliminary progress of a project to identify the attitudinal and creativity factors which affect the motivation of culturally disadvantaged students (Mexican-Americans, particularly). The project assumes that an awareness of the manifestations of a student's creativity can guide teachers in predicting his achievement and in developing techniques to motivate him. To identify these motivational factors, the project personnel administered the Individual Test of Creativity (ITOC), the Inventory of Self-Appraisal (ISA), and Meaning of Words Inventory (MOWI), the Group Test of Creativity, and the Inventory of Attitudes on Family Life and Children. The combined results of the ITOC, ISA, and MOWI were found to most effectively predict student achievement. The ITOC was especially superior to conventional test instruments. One section of this report applies the findings of the project to teaching and counseling situations, and includes classroom applications for 26 correlates of creative behavior. Bibliographies and discussions of prior research are included in this section. Additional sections list non-federally-financed personnel and the students tested. A sample of each test is included with the report.

Availability: The Director, Bureau of Educational Research, University of Southern California, University Park, Los Angeles, California 90007.

33. Richmond, Bert O. Creative and Cognitive Abilities of White and Negro Children. 1968, 9p. ED 030 922

The purpose of this study was to ascertain both the cognitive and creative output of white and Negro children. Intelligence and creativity test batteries were administered to 34 Negro and to 36 white eigth grade children in segregated, rural schools in a culturally deprived area of Georgia. Specific hypotheses tested were: (1) the level of cognitive functioning of Negro students differs significantly from that of white students in similar socioeconomic conditions, (2) white students score significantly higher than Negroes on measures of creativity, (3) creativity scores provide an understanding of students in addition to that proved by the traditional tests of intelligence, and (4) sex differences exist in both cognitive and creative ability. A one-way analysis of variance was used to obtain differences in creativity and cognitive ability for sex and race. The first hypothesis was supported. The second indicated that whereas white students were better able to verbalize than Negroes, the latter scored higher on figural elaboration. Sex differences were insignificant. Implications are inconclusive, but suggest that a deeper understanding of creativity coupled with improved educational practices to enhance creative expression might provide more meaningful educational experiences to the disadvantaged child.

34. Rogers, D. W. Visual Expression: A Creative Advantage of the Disadvantaged. Elementary School Journal, 1968, 68, 394-399.

Nonverbal creativity was studied in 125 fifth and sixth grade students, drawn from a random sample of 1900 students, and classified as advantaged or disadvantaged on the basis of family income, parental education and occupations, and geographical residence. Three tests were administered: a drawing test, the figural battery of the Torrance Tests of Creative Thinking, and the Meier Art Judgment Test. Results indicated the advantaged pupils were superior in drawing abilities. Based on these results, half of the disadvantaged children were taught basic drawing skills, and were given the test of drawing ability again. After instruction, there were no differences in drawing ability between the advantaged and disadvantaged children. The disadvantaged children scored significantly better on the Torrance Tests of Creative Thinking, and about the same as advantaged children on the art judgment test. The study indicates that disadvantaged children are capable of expressing their ideas visually, and can improve their drawing skills after a few hours of instruction.

35. Shapiro, Phyllis P.; Shapiro, Bernard J. An Evaluation of Poetry Lessons with Children from Less Advantaged Backgrounds. February 1971, 16p. ED 047 040 (Available in Microfiche Only)

A recent study (Shapiro & Shapiro, 1970) showed that fourth graders from an upper middle class background with varying degrees of intelligence, creativity, and language achievement could be taught to express themselves poetically. The present study was undertaken to replicate thest results with children from less advantaged backgrounds. The two alternative experimental programs for poetry writing developed for the initial study were used. Comparison of these results indicate that the methodologies employed are equally effective with both socio-economic groups. The effect of intelligence, creativity, and language achievement differs to some extent, the implications of both the similarities and differences are explored.

36. Shore, M. F.; And [illegible]rs. The Effectiveness of an Enrichment Program for Disadvantaged Young Children. American Journal of Orthopsychiatry, 1971, 41, 442-449.

Using a special semistructured instrument, the locus of control interview, an attempt was made to assess changes in feelings of powerlessness and helplessness--and their relation to cognitive changes--among 53 first grade students (23 boys and 30 girls) in a Follow Through program. Besides the interview, Ss were given the Raven Colored Progressive Matrices Tests and the Metropolitan Reading Readiness Tests. Results suggest that the pessimism which often surrounds enrichment programs may be unwarranted, and that youth and inexperience may be positive attributes in teachers of disadvantaged children.

37. Smith, Robert M. The Relationship of Creativity to Social Class. July 1965, 141p. ED 003 343

Environmental factors related to creative production were studied to obtain knowledge of the learning characteristics and educational performance of children from various socioeconomic levels. Children from the fifth grade were selected as subjects - 359 Negro and 244 white children. Further division included four socioeconomic levels. A variety of measuring instruments were employed to gather the data and test the variables. Analyses were accomplished via covariance analysis (with correction for unequal, disproportionate means) and factor analysis. The findings indicated significant differences in creative thought favoring the higher socioeconomic child in most verbal areas. The lower socioeconomic child, however, performed better in the nonverbal areas. Further research was suggested to determine the specific environmental factors which influence performance in creative thought.

38. Solomon, Anita O. A Comparative Analysis of Creative and Intelligent Behavior of Elementary School Children with Different Socio-Economic Backgrounds. Final Progress Report. 1967, 212p. ED 017 022

To test hypotheses related to the creative thinking of children from different socio-economic backgrounds, tests of creativity and of intelligence were administered to 722 first, third, and fifth grade children from different socio-economic backgrounds. Children of each sex in each grade were tested for verbal intelligence (as measured by the Peabody Picture Vocabulary Test), and creativity (as measured by the Torrance Tests of Creative Thinking, figural form A and verbal form B). The Torrance Test scores had greatest relationship to the combined independent variables (sex, intelligence, and socio-economic background) at the earliest years of school. These relationships decreased as the age and the grade level of children increased. While significant relationships were found between socio-economic status and creativity when other variables were held constant, these relationships did not follow a consistent pattern. The incidence of these significant relationships tended to decrease with increasing age and grade level. These findings indicated that the Torrance Test materials were relatively neutral toward different socio-economic classes. Scores were completely uncorrelated with intelligence tests, conforming the importance of emphasizing creativity as a separate dimension of thinking.

39. Starkweather, Elizabeth K. Potential Creative Ability and the Preschool Child. January 1966, 9p. ED 018 900

A study which used a variety of behavioral tasks to study potential creativity in preschool children is presented. The behavioral tasks, especially designed for measurement of young children, are described on the dimensions

of psychological freedom, willingness to try difficult tasks, freedom in use of conforming and nonconforming behavior, curiosity, and originality. The paper focuses upon the difficulties of measurement of young children and the need for other instruments, and proposes research about forces related to the development of characteristics of potentially creative children. The possibility that teachers could provide the child with the knowledge and experiences essential for responsible freedom to express creative abilities is explored. Five references are included. This document was published in the proceedings from the first seminar on productive thinking in education, Macalester College, St. Paul, Minnesota, pages 97-107, January 1966.

40. Taylor, C. W. Cultivating New Talents: A Way to Reach the Educationally Deprived. Journal of Creative Behavior, 1968, 2(2), 83-90

Basic research has indicated that there are at least 80 specific talents that can be identified and tested. Among these, there are at least 8 or 10 types of giftedness for which students can be tested and trained. Different people will be in each type of gifted groups. For example, academically deprived students may be talented in another area. The challenge is to devise various educational programs focused on developing previously unrecognized talents, whether in creativity or a different area. Such programs would particularly benefit the educationally deprived.

41. Torrance, E. P. Are the Torrance Tests of Creative Thinking Biased Against or in Favor of "Disadvantaged" Groups?" Gifted Child Quarterly, 1971, 75-80.

This article reviews studies which used the Torrance tests to make racial and socioeconomic class comparisons. Stimulus materials chosen for these tests included only things that were common to all children or strange to all children. Results of research indicate that disadvantaged children perform as well as, or better than, advantaged children. Findings indicate that creatively gifted disadvantaged children should be given a chance to develop their potential. Further, creative positives should be stressed, rather than compensation for deficits.

42. Torrance, E. P. Creative Positives of Disadvantaged Children and Youth. Gifted Child Quarterly, 1969, 71-81.

The argument of this paper is that there is a great deal of undiscovered talent among disadvantaged children and youth, and that the talents valued by a particular subculture should be identified and cultivated. Tests allowing children to respond in terms of their own experiences will help to identify some of these talents. A special creativity workshop was

designed to elicit these hidden abilities. Results indicated children labeled as disadvantaged and nonverbal were actually quite verbal, and that their language was rich in imagery.

43. Torrance, E. P. Finding Hidden Talents Among Disadvantaged Children. Gifted Child Quarterly, 1968, 131-137.

Disadvantaged children have special or "hidden" talents which generally are not uncovered by standard assessment procedures stressing academic achivement. The creativity workshop has been used successfully by the author in eliciting these hidden talents. Three procedures were used: no tests were given until the children had had time to become "warmed up"; no time limits were imposed; and the answers were recorded for the children. Results of the creativity tests given at the end of the workshop indicated that the children did have many hidden talents.

44. Torrance, E. P. Training Teachers and Leaders to Recognize and Acknowledge Creative Behavior Among Disadvantaged Students. Gifted Child Quarterly, 1972, 3-10.

The format and results of Torrance's creativity workshops have been described in earlier articles. The present study suggests specific ways to train teachers and to evaluate a creativity workshop. Included is a description of the Opinion Questionnaire on Culturally and Economically Disadvantaged Children and Youth, which was designed to assess the degree to which teachers have favorable and realistic attitudes concerning disadvantaged children and to predict the degree to which their attitudes would facilitate the establishment of good teacher-pupil relations with disadvantaged children.

45. Torrance, E. P.; Torrance, P. Combining Creative Problem Solving with Creative Expressive Activities in the Education of Disadvantaged Young People. Journal of Child Behavior, 1972, 6(1), 1-10.

A summer school course for graduate students involving a practicum creativity workshop is described. The practicum was three weeks long, and involved 91 disadvantaged elementary school students. There were many creative activities available, including training in problem solving, creative writing, creative movement, sculpture, painting and baking. Evaluations indicated growth in many areas of creativity, and showed that these children had become more involved in their learning, more open to curiosity, and had begun considering a greater variety of alternative solutions to problems. It was found that small group activities encouraged the most learning.

46. Vreeland, Rebecca S. The Effects of the Boston Educational Enrichment Program on Children's Attitudes, Values, and Creativity. 1967, 91p. ED 018 502

An evaluation of a 6-week summer educational enrichment program for disadvantaged students ranging from preschool to grade nine found that despite the shortness of the sessions progress was made toward reaching the goals of the program. The goals included increasing students' verbal and nonverbal creativity, developing student cooperation and tolerance, developing more positive attitudes toward school and toward authority, and bettering the work habits of the students. Teachers for the 445 participating students were drawn mostly from the independent schools in the Boston area which conducted the program. The teachers were given a share of the responsibility for curriculum development, teaching methods, discipline, and daily routine. The curriculum tried to improve the students' reading ability and comprehension, written and oral expression, and understanding and application of principles of scientific investigation and discovery. All students were performing at grade level when the program was initiated. The program was successful in increasing interest in intellectual matters, in emphasizing ethical rewards over material rewards, and in teaching the middle class values of neatness, punctuality, and honesty. The students also showed more tolerance for others, a greater willingness to cooperate, and a significant increase in creative thinking.

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Columbus, Ohio 43221

SOCIAL STUDIES/SOCIAL SCIENCE EDUCATION
855 Broadway
Boulder, Colorado 80302

TEACHER EDUCATION
One Dupont Circle, Suite 616
Washington, D. C. 20036

TESTS, MEASUREMENT, & EVALUATION
Educational Testing Service
Rosedale Road
Princeton, New Jersey 08540

VOCATIONAL & TECHNICAL EDUCATION
Ohio State University
1900 Kenney Road
Columbus, Ohio 43212

*ERIC/ECE is responsible for research documents on the physiological, psychological, and cultural development of children from birth through age eight, with major focus on educational theory, research and practice related to the development of young children.